

541,644

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 July 2004 (22.07.2004)

PCT

(10) International Publication Number
WO 2004/060942 A2

(51) International Patent Classification⁷: **C08F 112/08**,
4/52, C07F 17/00, C08F 120/06

(74) Common Representative: **ATOFINA RESEARCH**
S.A.; Patent Department, Zone Industrielle C, B-7181
Seneffe (Feluy) (BE).

(21) International Application Number:
PCT/EP2004/000142

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(22) International Filing Date: 6 January 2004 (06.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03/00086 7 January 2003 (07.01.2003) FR

(71) Applicants (for all designated States except US): **ATO-**
FINA RESEARCH S.A. [BE/BE]; Zone Industrielle C,
B-7181 Seneffe (Feluy) (BE). **CENTRE NATIONAL DE**
LA RECHERCHE SCIENTIFIQUE [FR/FR]; 3, rue
Michel Ange, F-75016 Paris (FR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CARPENTIER**,
Jean-François [FR/FR]; 5, allée des Lilas, F-35690
Acigne (FR). **KIRILLOV**, Evgueni [RU/DE]; Institut
für Organische Chemie, Friedrich-Alexander Universität
Erlangen-Nürnberg, 42, Henkestrasse, 91054 Erlangen
(DE). **RAZAVI**, Abbas [IR/BE]; 35, Domaine de la
Brisée, B-7000 Mons (BE).

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: GROUP III BRIDGED METALLOCENE BASED ON CYCLOPENTADIENYL-FLUORENYL LIGANDS

(57) Abstract: The present invention discloses a metallocene catalyst component of formula (Flu-R"-Cp)M(η³-C₃R'₃)(ether)_n (I) wherein Cp is a cyclopentadienyl, substituted or unsubstituted, Flu is a fluorenyl, substituted or unsubstituted, R" is a structural bridge between Cp and Flu imparting stereorigidity to the component, M is a metal Group III of the Periodic Table, each R' is the same or different and is hydrogen or a hydrocarbyl having from 1 to 20 carbon atoms and n is 0, 1 or 2. It further discloses a process for preparing said catalyst component and its used in the controlled polymerisation of polar or non polar monomers.



WO 2004/060942 A2